PATENT COOPERATION TREATY

PCT	From the INTERNATIONAL BUREAU				
NOTIFICATION OF ELECTION (PCT Rule 61.2)	Commissioner US Department of Commerce United States Patent and Trademark Office, PCT 2011 South Clark Place Room CP2/5C24 Arlington, VA 22202				
Date of mailing (day/month/year) 01 June 2001 (01.06.01)	ETATS-UNIS D'AMERIQUE in its capacity as elected Office				
International application No. PCT/GB00/03396	Applicant's or agent's file reference P10954PC/AS/AM				
International filing date (day/month/year) 04 September 2000 (04.09.00)	Priority date (day/month/year) 04 September 1999 (04.09.99)				
Applicant MARTIN, Andrew					
The designated Office is hereby notified of its election made: In the demand filed with the International Preliminary Examining Authority on: 26 March 2001 (26.03.01) In a notice effecting later election filed with the International Bureau on:					
2. The election X was was not made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).					

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Authorized officer

Olivia TEFY

Telephone No.: (41-22) 338.83.38

Facsimile No.: (41-22) 740.14.35

PATENT COOPERATION TREATY





SHANKS, Andrew et al. **CRUIKSHANK & FAIRWEATHER** 19 Royal Exchange Square Glasgow G1 3AE **GRANDE BRETAGNE**

From the INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY PTO/PET REC'D 04 MAR 2002

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL PRELIMINARY **EXAMINATION REPORT** (PCT Rule 71.1)

Date of mailing

(day/month/year)

20.11.2001

Applicant's or agent's file reference

AS/DM/P10954PC

IMPORTANT NOTIFICATION

International application No. PCT/GB00/03396

International filling date (day/month/year) 04/09/2000

Priority date (day/month/year)

04/09/1999

Applicant

MARTIN, Andrew

- 1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
- 2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
- 3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/

Authorized officer

European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx; 523656 epmu d Fax: +49 89 2399 - 4465

Goenechea Olmos, A

Tel.+49 89 2399-2664



PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

AS/DM/P10954PC FOR FURTHER ACTION Preliminary Examination of Transmittal of International Preliminary Examination Report (Fom PCT/IPEA/416) International application No. PCT/GB00/03396 04/09/2000 International Patent Classification (IPC) or national classification and IPC E2 1B4 1/00 Applicant MARTIN, Andrew 1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36. 2. This REPORT consists of a total of 5 sheets, including this cover sheet. This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT). These annexes consist of a total of 5 sheets.	Applicant	s or a	gent's file reference			
PCT/GB00/03396 O4/09/2000 O4/09/2000 O4/09/1999 O4/09/1999 O4/09/1999 O4/09/1999 Applicant MARTIN, Andrew 1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36. 2. This REPORT consists of a total of 5 sheets, including this cover sheet. ② This report is also accompanied by ANNEXES, i.e. sheets of the description, ctaims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.18 and Section 607 of the Administrative Instructions under the PCT). These annexes consist of a total of 5 sheets. 3. This report contains indications relating to the following items:	AS/DM/P10954PC International application No.		_	FOR FURTHER ACTION	See Notifi Prelimina	cation of Transmittal of International ry Examination Report (Form PCT/IPEA/416)
International Patient Classification (IPC) or national classification and IPC E21B41/00 Applicant MARTIN, Andrew 1. This international preliminary examination report has been prepared by this international Preliminary Examining Authority and is transmitted to the applicant according to Article 36. 2. This REPORT consists of a total of 5 sheets, including this cover sheet. ② This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.18 and Section 607 of the Administrative Instructions under the PCT). These annexes consist of a total of 5 sheets. 1. We assis of the report 1. Priority 1. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability 1. Version of the development of the priority o			•	1	nth/year)	.
Applicant Applicant MARTIN, Andrew 1. This international preliminary examination report has been prepared by this international Preliminary Examining Authority and is transmitted to the applicant according to Article 36. 2. This REPORT consists of a total of 5 sheets, including this cover sheet. ② This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.18 and Section 607 of the Administrative Instructions under the PCT). These annexes consist of a total of 5 sheets. 1. Seasis of the report 1. Priority 10. Priority 11. Priority 12. Lack of unity of invention 13. We reasoned statement under Article 35(2) with regard to novelty, inventive step and industrial applicability: citations and explanations suporting such statement 14. Seasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations suporting such statement 15. Certain documents cited 16. Certain observations on the international application 17. Certain defects in the international application 18. Certain observations on the international application of this report 18. Certain observations on the international application of the demand of the demand of the						04/09/1999
These annexes consist of a total of 5 sheets. This report contains indications relating to the following items: Basis of the report	Applicant MARTIN 1. This and is	I, And internal train	drew ational preliminary examinamitted to the applicant according to the applicant according to the according to the according to the basis according to the basis.	nation report has been prepare coording to Article 36. 5 sheets, including this cover by ANNEXES, i.e. sheets of the for this report and/or sheets.	sheet. he description	n, claims and/or drawings which have
Basis of the report	(1	588 H	ule 70.16 and Section 607	of the Administrative Instruct	ions under th	e PCT).
Priority	3. This re	ероп	contains indications relation	ng to the following items:		
Non-establishment of opinion with regard to novelty, inventive step and industrial applicability Lack of unity of invention	t	\boxtimes	Basis of the report			
IV	11		Priority			
IV	(1)		Non-establishment of opi	nion with regard to novelty, in	entive step a	and industrial apolicability
Citations and explanations suporting such statement VI Certain documents cited VII Certain defects in the international application VIII Certain observations on the International application Pate of submission of the demand Date of completion of this report 20.11.2001 James and mailing address of the international reliminary examining authority: European Patent Office D-80299 Munich Tel. +49 89 2399 · 0 Tx: 523656 epmu d Fax: +49 89 2399 · 4465 Telephone No. +49 89 2399 7534	IV				,	
VIII ☑ Certain defects in the international application VIII ☑ Certain observations on the international application Pate of submission of the demand Date of completion of this report 20.11.2001 Date of completion of this report 20.11.2001 Authorized officer European Patent Office D-80298 Munich Tel. +49 89 2399 · 0 Tx: 523656 epmu d Fax: +49 89 2399 · 4465 Telephone No. +49 89 2399 7534	V	_	citations and explanations	s suporting such statement	novelty, inver	ntive step or industrial applicability;
VIII Certain observations on the International application Date of submission of the demand Date of completion of this report 20.11.2001 Date of completion of this report 20.11.2001 Authorized officer European Patent Office D-80298 Munich Tel. +49 89 2399 • 0 Tx: 523656 epmu d Fax: +49 89 2399 • 4465 Telephone No. +49 89 2399 7534						
Date of submission of the demand Date of completion of this report 20.11.2001 Date of completion of this report 20.11.2001 Authorized officer European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465 Date of completion of this report Discrepancy Discrepancy DIAZ, M Telephone No. +49 89 2399 7534		_				
20.11.2001 arms and malling address of the international retirminary examining authority: European Patent Office D-80298 Munich Tel. +49 89 2399 • 0 Tx: 523656 epmu d Fax: +49 89 2399 • 4465 Telephone No. +49 89 2399 7534	VII)		Certain observations on the	ne International application		
Authorized officer European Patent Office D-80298 Munich Tel. +48 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465 Authorized officer DIAZ, M Telephone No. +49 89 2399 7534	Date of subn	nissio	n of the demand	Date of c	completion of th	is report
European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465 Telephone No. +49 89 2399 7534	26/03/200	1		20.11.20	301	
D-80298 Munich Tel. +49 89 2399 · 0 Tx: 523656 epmu d Fax: +49 89 2399 · 4465 Telephone No. +49 89 2399 7534	preliminary e	xamir	ing authority:	Authorize	ed officer	
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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB00/03396

I.	Basis of the report
1.	With regard to the elements of the international application (Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as foreignally float.

	and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)). Description, pages:								
	1.	13	as originally filed						
	C	aims, No.:							
	1-	28	as received on	07/11/2001	with letter of	18/10/2001			
	Dr	awings, No.:							
	1-(3	as originally filed						
2.	. Wi	With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.							
	The	ese elements were a	available or furnished to this Au	ithority in the fo	ollowing language:	, which is:			
		the language of a	translation furnished for the pu	rposes of the in	nternational search	(under Rule 23.1(b)).			
			blication of the international ap						
		the language of a to 55.2 and/or 55.3).	translation furnished for the pur	rposes of interr	national preliminary	examination (under Rule			
3.	Wit inte	h regard to any nuc rnational preliminan	leotide and/or amino acid ser y examination was carried out	quence disclos on the basis of	ed in the internation the sequence listing	nal application, the g:			
		contained in the int	ternational application in writter	n form.					
		filed together with t	he international application in d	computer reada	ible form.				
		furnished subseque	ently to this Authority in written	form.					
		furnished subseque	ently to this Authority in compu	ter readable for	rm.				
		The statement that the international ap	the subsequently furnished wr plication as filed has been turn	itten sequence iished.	listing does not go	beyond the disclosure in			
		The statement that listing has been fur	the information recorded in consisted.	mputer readabl	e form is identical to	o the written sequence			
4.	The	amendments have	resulted in the cancellation of:						
		the description,	pages:						
		the claims.	Nos.:						





INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB00/03396

	the drawings,	sheets:
5.		established as if (some of) the amendments had not been made, since they have been not the disclosure as filed (Rule 70.2(c)):
	(Any replacement sh report.)	eet containing such amendments must be referred to under item 1 and annexed to this
_	 and the second second	.

- Additional observations, if necessary:
- V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- 1. Statement

Novelty (N)

Yes:

: Claims 1-28

No:

Claims

Inventive step (IS)

Yes: No: Claims 1-28

ME

Claims

Industrial applicability (IA)

Yes: No: Claims 1-28

o: Claims

2. Citations and explanations see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted: see separate sheet

VIII. Certain observations on the International application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made: see separate sheet





INTERNATIONAL PRELIMINARY International application No. PCT/GB00/03396 EXAMINATION REPORT - SEPARATE SHEET

Re Item V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

- D1 (US-A-5 004 051) discloses a method of storing and transporting drilling waste produced in an offshore drilling operation (see claim 17, lines 32-34), the method comprising the steps of:
 - providing a moveable container for receiving drilling waste (see column 2, lines 9-10 and column 2, lines 51-57);
 - securing the container, in a position below sea-level (see claim 17, lines 36-38);
 - connecting the container to a drilling platform or vessel and conveying drilling waste from the platform or vessel to the container (see claim 17, lines 48-49).

The problem may be regarded as how to provide a container maintained underwater and above the seabed, which is protected from the adverse weather conditions.

This problem is solved in the known method by the distinguishing feature of claim 1: container of adjustable buoyancy. This feature is neither known nor suggested by the prior art documents and solve the above mentioned problem by adjusting the buoyancy of the container in such way that it is suspended at a depth between the sea surface ans the seabed.

The same problem and solution applies for the apparatus claim 16 which includes the same distinguishing feature. Consequently, the subject-matter of claims 1 and 16 meets the requirements of Art. 33(2)-(4) PCT.

2) Claims 2-15 and 17-28 are dependent from 1 and 16 respectively and define preferred embodiments. They also meet the requirements of Article 33(2)-(4) PCT.

Re Item VII

Certain defects in the international application

- Rule 6.3 (b) PCT: correct two-part form of independant claims 1 and 16 with regard to





INTERNATIONAL PRELIMINARY

International application No. PCT/GB00/03396

EXAMINATION REPORT - SEPARATE SHEET

D1.

- Rule 6.2 (b) PCT.
- Rules 5.1 (a) (ii) PCT reference to the documents D1 and D2 and its disclosure.
- The unit of measure (feet) employed on page 11 is not additionally expressed in terms of the units stipulated by Rule 10.1(a) PCT.

Re Item VIII

Certain observations on the international application

Claim 17 reads "The apparatus of claim 16 wherein the securing means comprises an anchor means to be attached to the sea bed. comprises an anchor means to be attached to the sea bed." and the repetition of the last sentence is not clear (Art. 6 PCT).

PROPOSED PRELIMINARY AMENDMENT

CLAIMS

1. A method of storing and transporting drilling waste produced in an offshore drilling operation, the method comprising the steps of:

providing a moveable container of adjustable buoyancy for receiving drilling waste;

securing the container in a position below sea-level; connecting the container to a drilling platform or vessel; and

conveying drilling waste from the platform or vessel to the container.

- 2. The method of claim 1, further comprising the steps of: releasing the container from its position; and transporting the container to a drilling waste recycling facility.
- 3. The method of claim 1 [or 2] wherein at least two containers are provided.
- 4. The method of [any preceding claim] claim 1 further

comprising the step of agitating the drilling waste within the container.

- 5. The method of claim 4 wherein the agitation step comprises rotating or otherwise moving the container in the water.
- 6. The method of claim 5 wherein the container is provided with external fins or the like which tend to rotate or move the container in response to sea currents.
- 7. The method of [any preceding claim] <u>claim 1</u> comprising the step of securing the container in position by anchoring the container to the seabed.
- 8. The method of [any preceding claim] claim 1 further comprising the step of adjusting the buoyancy of the container, to maintain the container at a substantially constant depth.
- 9. The method of [any preceding claim] claim 1 comprising the step of releasably fixing the container to the sea floor.
- 10. The method of [any preceding claim] claim 1 further comprising the step of conveying drilling waste to a

smaller volume holding tank on the platform, prior to conveying the waste to the container.

- 11. The method of (any preceding claim) <u>claim 1</u> comprising the step of macerating the drilling waste prior to conveying the waste to the container.
- 12. The method of {any preceding claim} claim 1 further comprising the step of determining selected parameters of the waste [prior] and then adjusting said parameters before conveying the waste to the container.
- 13. The method of [any preceding claim] claim 1 further comprising the step of adding oil to the drilling waste prior to conveying the waste to the container.
- 14. The method of [any preceding claim] <u>claim 1</u> further comprising the step of agitating the contents of the container whilst the container is transported to a treatment facility.
- 15. The method of [any preceding claim] claim | further
 comprising the steps of:

providing an additional container; and maintaining at least one container at the platform or vessel.

- 16. An apparatus for use in storage and transport of drilling waste, the apparatus comprising a moveable container of adjustable buoyancy for containing drilling waste; securing means for releasably securing the container in position below sea level; and connection means for connecting the container to a drilling platform or vessel.
- 17. The apparatus of claim 16 wherein the securing means comprises an anchor means to be attached to the sea bed.
- 18. The apparatus of claim 17 wherein the anchor means comprises a base to be located on the seabed, configured so as to receive and retain at least one container.
- 19. The apparatus of any [one of claims 16 to 18] claim 16 wherein the container comprises agitation means, to enable the contents of the container to be agitated.
- 20. The apparatus of claim 19 wherein the agitation means comprises an internal rotating paddle.
- 21. The apparatus of claim 19 [or claim 20] wherein the agitation means comprises external fins mounted on the container, such that the container rotates in response to sea currents.

- 22. The apparatus of [any one of claims 16-21] claim 16 wherein the container comprises a double skin, with a cavity between the skins which may be filled with air or seawater as desired, in order to adjust buoyancy.
- 23. The apparatus of [any one of claims 16 to 22] <u>claim 16</u> wherein the connection means comprises a flexible conduit for conveying drilling waste.
- 24. The apparatus of claim 23 wherein a plurality of flexible conduits are provided.
- 25. The apparatus of [any one of claims 16 to 24] claim 16 further comprising a holding tank for holding drilling waste prior to conveying the waste to the container.
- 26. The apparatus of [any of claims 16 to 25] claim 16, further comprising a macerator.
- 27. The apparatus of [any of claims 16 or 26] <u>claim 16</u> further including means for determining selected parameters of the drilling waste.
- 28. The apparatus of [any of claims 16 to 27] claim 16, further comprising means for adding oil to the drilling waste.

29. (New) A method of storing and transporting waste produced in the course of offshore operations, the method comprising the steps of:

providing a moveable container of adjustable buoyancy for receiving waste;

securing the container in a position below sea-level; connecting the container to an offshore structure; and

conveying waste from the structure to the container.

30. (New) An apparatus comprising a moveable container of adjustable buoyancy for containing waste; securing means for releasably securing the container in position below sea level; and connection means for connecting the container to an offshore structure.

DRILLING WASTE HANDLING

ABSTRACT

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A method and an apparatus for storage and transport of drilling waste is provided. A number of storage containers 12 are anchored to the sea bed by means of anchors 15 and cables 13. The location of the containers 12 is marked with buoys 17. The containers 12 are of adjustable buoyancy, and are arranged to remain below the surface of the sea. Drilling waste is macerated on board a drilling vessel 18, and pumped via conduits 20 into the containers 12. Once the containers 12 are full, a tug 22 collects the containers 12 and transports them to an onshore waste recycling facility, while empty tanks are returned to the drilling vessel 18 to be reused. The containers 12 may be arranged to agitate stored waste, either by means of an internal agitator, or by virtue of fins or paddles mounted on the containers 12, to rotate the containers in response to sea currents.

DYKAS, SIEVER & NIPPER, ELP

PATENT ◆ TRADEMARK ◆ COPYRIGHT ◆ INTERNATIONAL

FRANK J. DYKAS Registered Patent Attorney dykas@dykaslaw.com

ROBERT L. SHAVER
Registered Patent Attorney
shaver@dykaslaw.com

STEPHEN M. NIPPER Registered Patent Attorney nipper@dykaslaw.com

DEREK H. MAUGHAN Attorney At Law maughan@dykaslaw.com

March 4, 2002

Assistant Commissioner United States Patent and Trademark Office Washington, D.C. 20231

Re:

PCT Application No. PCT/GB00/03396

Filing Date: September 4, 1999 Attorney Docket No. MARA101

Dear Assistant Commissioner:

Please amend the applicant's address to read as follows:

Andrew Martin
GAIA LODGE
Blairs
Aberdeen
Scotland
AB12 5YT
UNITED KINGDOM

An Oath and Declaration is forthcoming from said Applicant, who is currently unavailable.

Yours very truly,

FRANK J. DYKAS

Registered Patent Attorney

Reg. No. 28,072

FJD/smw

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's AS/DM/P	or agent's file reference 10954PC	FOR FURTHER ACTION		ation of Transmittal of International Examination Report (Form PCT/IPEA/416)		
Internationa	application No.	International filing date (day/mont	h/year)	Priority date (day/month/year)		
PCT/GB0	0/03396	04/09/2000		04/09/1999		
Internationa	l Patent Classification (IPC) or na	itional classification and IPC				
E21B41/0	00					
Applicant						
MARTIN,	Andrew					
	nternational preliminary exami transmitted to the applicant a		d by this Inte	rnational Preliminary Examining Authority		
2. This F	REPORT consists of a total of	5 sheets, including this cover s	sheet.			
be (s	een amended and are the bas	sis for this report and/or sheets of the Administrative Instruct	containing red	n, claims and/or drawings which have ctifications made before this Authority e PCT).		
3. This re	eport contains indications rela	uting to the following items:				
1	Basis of the report □					
	☐ Priority	44		N. C. A. C. B. C. D. C. B. HOLL.		
	<u> </u>	ppinion with regard to novelty, in	ventive step a	and industrial applicability		
"	☐ Lack of unity of invention		novolty invo	entive step or industrial applicability;		
		nger Article 35(2) with regard to ons suporting such statement	noverty, mve	ntive step of industrial applicability,		
VI.	☐ Certain documents cite					
VII	☑ Certain defects in the ir	nternational application				
VIII	☑ Certain observations or	n the international application				
Date of sub	mission of the demand	Date of	completion of t	this report		
26/03/200)1	20.11.2	2001			
	nailing address of the internationa examining authority:	ıl Authori.	zed officer	SONO MINNE		
	European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656	· · · · · · · · · · · · · · · · · · ·		The same same same same same same same sam		
	Fax: +49 89 2399 - 4465 Telephone No. +49 89 2399 7534					



International application No. PCT/GB00/03396

l. Bas	is of	the	report
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1. With regard to the elements of the international application (Replacement sheets which have been furnished the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally fix and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)): Description, pages:				s report as "originally filed"		
	1-13	3	as originally filed			
	Cla	ims, No.:				
	1-28	8	as received on	07/11/2001	with letter of	18/10/2001
	Dra	wings, No.:				
	1-3		as originally filed			
2.			guage, all the elements international application			hed to this Authority in the under this item.
	The	se elements were a	available or furnished to	this Authority in the	following language	e: , which is:
		the language of a	translation furnished for	r the purposes of the	international sear	ch (under Rule 23.1(b)).
		the language of pu	ublication of the internat	tional application (un	der Rule 48.3(b)).	
		the language of a 55.2 and/or 55.3).	translation furnished for	r the purposes of inte	ernational prelimina	ary examination (under Rule
3.			eleotide and/or amino y examination was carr			
		contained in the in	iternational application i	in written form.		
		filed together with	the international applica	ation in computer rea	dable form.	
		furnished subsequ	ently to this Authority in	written form.		
		furnished subsequ	ently to this Authority in	n computer readable	form.	
			t the subsequently furn pplication as filed has b		ce listing does not	go beyond the disclosure in
		The statement tha listing has been fu		led in computer reada	able form is identio	cal to the written sequence
4.	The	amendments have	e resulted in the cancell	ation of:		
		the description,	pages:			
		the claims,	Nos.:			





		the drawings,	sheets:		
5.					ome of) the amendments had not been made, since they have beer as filed (Rule 70.2(c)):
		(Any replacement she report.)	eet contair	ning such	amendments must be referred to under item 1 and annexed to this
6.	Add	litional observations, if	necessar	y:	
V.		soned statement un tions and explanatio			ith regard to novelty, inventive step or industrial applicability;
1.	Stat	tement			
	Nov	velty (N)	Yes: No:	Claims Claims	1-28
	Inve	entive step (IS)	Yes: No:	Claims Claims	1-28
	Indu	ustrial applicability (IA)	Yes: No:	Claims Claims	1-28

2. Citations and explanations see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted: see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made: see separate sheet

Re Item V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

- D1 (US-A-5 004 051) discloses a method of storing and transporting drilling waste produced in an offshore drilling operation (see claim 17, lines 32-34), the method comprising the steps of:
 - providing a moveable container for receiving drilling waste (see column 2, lines 9-10 and column 2, lines 51-57);
 - securing the container, in a position below sea-level (see claim 17, lines 36-38);
 - connecting the container to a drilling platform or vessel and conveying drilling waste from the platform or vessel to the container (see claim 17, lines 48-49).

The problem may be regarded as how to provide a container maintained underwater and above the seabed, which is protected from the adverse weather conditions.

This problem is solved in the known method by the distinguishing feature of claim 1: container of adjustable buoyancy. This feature is neither known nor suggested by the prior art documents and solve the above mentioned problem by adjusting the buoyancy of the container in such way that it is suspended at a depth between the sea surface ans the seabed.

The same problem and solution applies for the apparatus claim 16 which includes the same distinguishing feature. Consequently, the subject-matter of claims 1 and 16 meets the requirements of Art. 33(2)-(4) PCT.

Claims 2-15 and 17-28 are dependant from 1 and 16 respectively and define 2) preferred embodiments. They also meet the requirements of Article 33(2)-(4) PCT.

Re Item VII

Certain defects in the international application

- Rule 6.3 (b) PCT: correct two-part form of independant claims 1 and 16 with regard to



D1.

- Rule 6.2 (b) PCT.
- Rules 5.1 (a) (ii) PCT reference to the documents D1 and D2 and its disclosure.
- The unit of measure (feet) employed on page 11 is not additionally expressed in terms of the units stipulated by Rule 10.1(a) PCT.

Re Item VIII

Certain observations on the international application

Claim 17 reads "The apparatus of claim 16 wherein the securing means comprises an anchor means to be attached to the sea bed. comprises an anchor means to be attached to the sea bed." and the repetition of the last sentence is not clear (Art. 6 PCT).

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CLAIMS

- 1. A method of storing and transporting drilling waste produced in an offshore drilling operation, the method comprising the steps of:
- providing a moveable container of adjustable buoyancy for receiving drilling waste;

securing the container in a position below sea-level; connecting the container to a drilling platform or vessel; and

- conveying drilling waste from the platform or vessel to the container.
 - 2. The method of claim 1, further comprising the steps of: releasing the container from its position; and transporting the container to a drilling waste recycling facility.
 - 3. The method of claim 1 or 2 wherein at least two containers are provided.
 - 4. The method of any preceding claim further comprising the step of agitating the drilling waste within the container.

- 5. The method of claim 4 wherein the agitation step comprises rotating or otherwise moving the container in the water.
- 6. The method of claim 5 wherein the container is provided
 with external fins or the like which tend to rotate or move
 the container in response to sea currents.
 - 7. The method of any preceding claim comprising the step of securing the container in position by anchoring the container to the seabed.
- 8. The method of any preceding claim further comprising the step of adjusting the buoyancy of the container, to maintain the container at a substantially constant depth.
 - 9. The method of any preceding claim comprising the step of releasably fixing the container to the sea floor.
- 10. The method of any preceding claim further comprising the step of conveying drilling waste to a smaller volume holding tank on the platform, prior to conveying the waste to the container.
- 11. The method of any preceding claim comprising the step
 20 of macerating the drilling waste prior to conveying the
 waste to the container.

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- 12. The method of any preceding claim further comprising the step of determining selected parameters of the waste prior and then adjusting said parameters before conveying the waste to the container.
- 5 13. The method of any preceding claim further comprising the step of adding oil to the drilling waste prior to conveying the waste to the container.
 - 14. The method of any preceding claim further comprising the step of agitating the contents of the container whilst the container is transported to a treatment facility.
 - 15. The method of any preceding claim further comprising the steps of:

providing an additional container; and

maintaining at least one container at the platform or

vessel.

- 16. An apparatus for use in storage and transport of drilling waste, the apparatus comprising a moveable container of adjustable buoyancy for containing drilling waste; securing means for releasably securing the container in position below sea level; and connection means for connecting the container to a drilling platform or vessel.
- 17. The apparatus of claim 16 wherein the securing means comprises an anchor means to be attached to the sea bed.

comprises an anchor means to be attached to the sea bed.

- 18. The apparatus of claim 17 wherein the anchor means comprises a base to be located on the seabed, configured so as to receive and retain at least one container.
- 5 19. The apparatus of any one of claims 16 to 18 wherein the container comprises agitation means, to enable the contents of the container to be agitated.
 - 20. The apparatus of claim 19 wherein the agitation means comprises an internal rotating paddle.
- 21. The apparatus of claim 19 or claim 20 wherein the agitation means comprises external fins mounted on the container, such that the container rotates in response to sea currents.
- 22. The apparatus of any one of claims 16-21 wherein the container comprises a double skin, with a cavity between the skins which may be filled with air or seawater as desired, in order to adjust buoyancy.
 - 23. The apparatus of any one of claims 16 to 22 wherein the connection means comprises a flexible conduit for conveying drilling waste.
 - 24. The apparatus of claim 23 wherein a plurality of

flexible conduits are provided.

- 25. The apparatus of any one of claims 16 to 24 further comprising a holding tank for holding drilling waste prior to conveying the waste to the container.
- 5 26. The apparatus of any of claims 16 to 25, further comprising a macerator.
 - 27. The apparatus of any of claims 16 or 26 further including means for determining selected parameters of the drilling waste.
- 28. The apparatus of any of claims 16 to 27, further comprising means for adding oil to the drilling waste.



(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference		of Transmittal of International Search Report (20) as well as, where applicable, item 5 below.			
P10954PC/AS/AM	ACTION (FOILI FC 1/15A/2	20) as well as, where applicable, item 5 below.			
International application No.	International filing date (day/month/year)	(Earliest) Priority Date (day/month/year)			
PCT/GB 00/03396	04/09/2000	04/09/1999			
Applicant	·				
MARTIN, Andrew					
This International Search Report has bee according to Article 18. A copy is being tr	n prepared by this International Searching Autransmitted to the International Bureau.	nority and is transmitted to the applicant			
This International Search Report consists It is also accompanied by	of a total of sheets. a copy of each prior art document cited in this	report.			
Basis of the report					
	international search was carried out on the bas less otherwise indicated under this item.	sis of the international application in the			
the international search v Authority (Rule 23.1(b)).	vas carried out on the basis of a translation of the	he international application furnished to this			
b. With regard to any nucleotide ar was carried out on the basis of th		ternational application, the international search			
l —	onal application in written form.				
filed together with the into	ernational application in computer readable form	n.			
furnished subsequently to	this Authority in written form.				
l <u>—</u>	this Authority in computer readble form.				
	bsequently furnished written sequence listing d as filed has been furnished.	oes not go beyond the disclosure in the			
the statement that the inf furnished	ormation recorded in computer readable form is	s identical to the written sequence listing has been			
2. Certain claims were fou	nd unsearchable (See Box I).				
3. Unity of invention is lac	king (see Box II).				
4. With regard to the title,					
X the text is approved as so	abmitted by the applicant.				
the text has been established	shed by this Authority to read as follows:				
5. With regard to the abstract,					
X the text is approved as si	ubmitted by the applicant.				
	shed, according to Rule 38.2(b), by this Authori e date of mailing of this international search rep				
6. The figure of the drawings to be pub	lished with the abstract is Figure No.	1			
as suggested by the app	icant.	None of the figures.			
because the applicant fai	led to suggest a figure.				
because this figure better characterizes the invention.					



PCT 00/03396

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 E21B41/00 E21B21/01 E21B21/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

TULSA

C. DOCUM	C. DOCUMENTS CONSIDERED TO BE RELEVANT						
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.					
Р,Х	WO 99 46474 A (MOORE) 16 September 1999 (1999-09-16) claim 1	1,16					
A	US 5 004 051 A (ROSENDAHL ET AL.) 2 April 1991 (1991-04-02) claims 1,17	1,16					
А	GB 2 330 600 A (BAILEY) 28 April 1999 (1999-04-28) abstract/	1,16					

Y Further documents are listed in the continuation of box C.	Y Patent family members are listed in annex.			
	<u>^</u>			
° Special categories of cited documents :	*T* later document published after the international filing date			
'A' document defining the general state of the art which is not considered to be of particular relevance	or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention			
'E' earlier document but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to			
'L' document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another	involve an inventive step when the document is taken alone 'Y' document of particular relevance; the claimed invention			
citation or other special reason (as specified)	cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled			
O document referring to an oral disclosure, use, exhibition or other means				
P document published prior to the international filing date but	in the art.			
later than the priority date claimed	*&* document member of the same patent family			
Date of the actual completion of the international search	Date of mailing of the international search report			
14 December 2000	19/01/2001			
Name and mailing address of the ISA	Authorized officer			
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Rampelmann, K			

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Internationa	I Application No
PCT PCT	00/03396

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT							
ategory °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.					
A	N.N.: "Unique design, strict operating rules mark Zuidwal field" OIL & GAS JOURNAL, vol. 86, no. 33, 15 August 1988 (1988-08-15), pages 44-46, XP002155493 tulsa, okla., usa page 46, figure entitled "Handling Zuidwal cuttings, liquid waste"	1,16					
A	ARNHUS ET AL.: "Cuttings and waste mud disposal, paper no. SPE/IADC 21949" 1991 SPE/IADC DRILLING CONFERENCE, 11 - 14 March 1991, pages 461-472, XP002155494 Amsterdam, The Netherlands page 465, paragraph "Arrangement and system"; page 468, paragraph "Logistics involved for cuttings transport to shore"	1,16					

Information patent family members

International Application No
PC 00/03396

Patent document cited in search report	rt .	Publication date		atent family nember(s)	Publication date
WO 9946474	Α	16-09-1999	US AU	6062313 A 3313399 A	16-05-2000 27-09-1999
US 5004051	Α	02-04-1991	GB NO	2236781 A,B 173521 C	17-04-1991 22-12-1993
GB 2330600	Α	28-04-1999	AU WO	9551098 A 9922113 A	17-05-1999 06-05-1999